THINK7 CANADA 2025

G7 ★ 2025 KANANASKIS

Task Force 2: Digitalization of the Global Economy

Rules as Code for a More Transparent and Efficient Global Economy

Authors:

Jess Rapson

Patrick A. McLaughlin

Meng Weng Wong

Jason Morris

Richard Pope

Matti Schneider

Tejas Sinha

Vitor Tomaz

April 2025

Key Points

- Rules as Code (RaC) is the process of encoding legislation into machine-executable formats to enhance public service delivery by improving non-expert access to complex laws, automating the downstream impacts of legislative changes, facilitating AI use in governance, and enabling agencies to simulate policy impacts before implementation.
- RaC offers a cost-effective way to modernize governance with minimal upfront investment, achieving goals of improving government efficiency and enhancing digital public services.
- The G7 should establish a Regulatory Innovation Task Force (G7 RITF), overseen by the Digital & Technology Working Group, to research and provide recommendations to G7 Digital and Tech Ministers on implementing machine-executable legislation, promote knowledge-sharing, and support national RaC initiatives among G7 members.
- RaC should be integrated into the rule-drafting process from the outset, with G7-backed pilot projects in politically feasible areas, focusing on high-impact, accurate prototypes like machine-executable benefit assessments and promoting open-source tools.

Introduction

The G7 has increasingly focused on digital governance, recognizing technology's potential to improve public services. At the 2024 G7 Industry, Technology, and Digital Ministers Meeting, discussions on digital identity and infrastructure aligned with OECD efforts to enhance government transparency and accountability (OECD 2016). However, traditional legislative processes often lag behind technology, leading to inefficiencies and inconsistent law application.
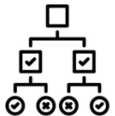
Rules as Code (RaC) modernizes government services by encoding legislation into machine-executable formats. Unlike traditional laws, which are written for human interpretation, RaC structures legal texts programmatically, enabling automation, data-driven policy testing, and compliance verification. This approach identifies gaps and inefficiencies and facilitates seamless implementation via APIs across sectors (Canada School of Public Service 2024). RaC also improves public engagement and transparency by making laws accessible to civil society, enabling real-time policy analysis and feedback. It is a cost-effective strategy, requiring minimal investment while offering long-term benefits like AI-driven compliance monitoring and improved service delivery (de Sousa, 2021).

By fostering collaboration on data standards and best practices, the G7 can drive digital integration, enhance governance, and meet evolving citizen expectations, aligning with the G7's commitment to leveraging technology for the public good.

Rules as Code Framework

Traditional rulemaking follows a complex and reflective process, where laws are drafted in natural language, adopted politically, and later interpreted for implementation, often leading to inefficiencies and inconsistencies (Mohun and Roberts 2020). RaC addresses these challenges by encoding legislation into machine-executable formats from the outset, enabling automation, improving compliance, and enhancing service delivery.

Figure 1. Differences between written legislation and Rules as Code (Mohun and Roberts 2020)

	Written Legislation	Rules as Code (RaC)
Format	Natural language text	Machine-readable code
Interpretation	Requires human analysis	Directly executable by systems
Implementation	Manual adaptation by entities	Standardized API execution
Consistency	Prone to varied interpretations	Uniform logical application
Format	Requires human analysis	Directly executable by systems
Transparency	Limited public accessibility	Open, testable models and tools
Efficiency	Lengthy bureaucratic process	Faster automation and validation

Approaches to RaC

There is no single approach to encoding Rules as Code (RaC), with various engines supporting different use cases. Notable RaC engines include OpenFisca, Blawx, DataLex, Drools, Red Hat Decision Manager, Neota Logic, and Flora-2. OpenFisca, developed by the French Government in 2011, is a scalable Python-based engine used by governments and researchers. Its open-source nature allows collaborative rule modeling and API-driven calculations, powering applications like LexImpact and BenefitMe for legislative impact assessments. OpenFisca is endorsed by the UNDP and OECD. Blawx, developed by Canada, enables non-programmers to encode and simulate rules using a visual interface (Canada School of Public Service 2024).

RaC applies logic and decision trees for consistent, automated rule enforcement. For instance, OpenFisca encodes a flat tax policy in Python, calculating tax as a percentage of salary. However, translating legislation into code is challenging due to legal complexity and ambiguity. Best practices, legal clarity, and gradual implementation in low-risk areas are crucial for success.

Once encoded, RaC is accessed via APIs, allowing businesses and individuals to check benefits eligibility, tax obligations, or regulatory compliance. Tools like Aides Jeunes (France), BenefitMe (New Zealand), and ROSA (EU) assist citizens and businesses. Policymakers use RaC-powered simulations, such as TaxIPP (France), LexImpact (France), and PolicyEngine (US, UK), to assess policy impacts and refine legislation.

Figure 2. Basic example of encoding a policy for a flat tax on salaries using Python (OpenFisca 2024a)

```python
class flat_tax_on_salary(Variable):
    value_type = float
    entity = Person
    definition_period = MONTH
    label = u"Individualized and monthly paid tax on salaries"

    def formula(person, period):
        salary = person('salary', period)
        return salary * 0.25
```

Figure 3. Potential user journeys for interacting with Rules as Code (Martin 2023)

Figure 3. Potential user journeys for interacting with Rules as Code (Martin 2023)
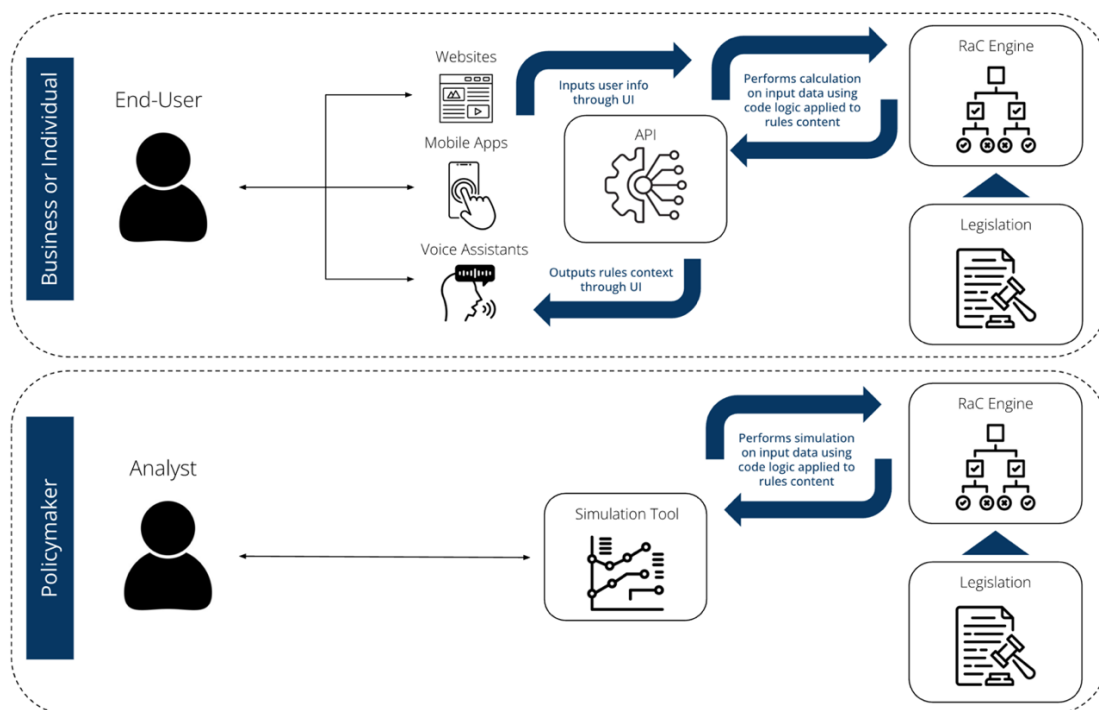
The Case for Developing RaC

There are several key benefits that G7 leaders can achieve through successful RaC adoption:

- Increased policy effectiveness – RaC enhances service delivery efficiency with minimal investment, requiring only small teams (1–2 people) to encode legislation (Australian Society for Computers & Law 2021). By formalizing policy logic, RaC bridges the gap between intent and execution, improving accuracy and policy outcomes.
- Reduced regulatory compliance burden – Machine-executable rules allow businesses and individuals to interpret regulations without costly intermediaries, reducing compliance costs and complexity through enabling the creation of third-party assessment tools that make obligations and eligibility clear without expert consultation.
- Greater transparency in policy and legislation – Making machine-executable rules accessible helps citizens and lawmakers easily understand complex legislation by using third-party tools to interpret legal requirements, assess compliance, and understand policy impacts in a clear, user-friendly format. This promotes citizen engagement and feedback in the rulemaking process, as seen with French think

tanks, activists, and journalists using OpenFisca graphs in climate demonstrations (Shulz, 2019).

- Improved policy risk mitigation – Centralizing and standardizing rules reduces the risk of errors and non-compliance. Agencies can also use RaC to simulate the impacts of policies before they are implemented, such as foreseeing the prospective impact of restructuring a benefit scheme or predicting the economic effects of marginal tax adjustments. This provides more stability and confidence in the governance process.
- Increased interoperability – Machine-executable rules enable different government agencies, levels, and even nations to seamlessly exchange and integrate information. This accessibility minimizes redundancy, reduces the need for manual translations and updates, and ensures that rules are interpreted consistently across diverse systems.
- Innovation in service delivery – By facilitating third-party access to rules, RaC encourages innovation in public service delivery and enables new technologies such as automated decision-making and AI, improving government services. It also has the potential to strengthen democratic processes by making stakeholder access to rules more inclusive.
- Faster and automatic rule updates – RaC enables quicker updates, automatically propagating changes across all systems and reducing manual effort (Lindqvist 2024). This lays the groundwork for laws to seamlessly integrate into smart devices, ensuring compliance in real time (Bullinga, 2004).

Table 1. Analysis of benefits from adopting Rules as Code

Benefit	Primary Beneficiary	Likelihood	Importance
Increased policy effectiveness	Government agencies; Civil society	Medium	High
Reduced regulatory compliance burden	Business and industry	High	Medium
Greater transparency in policy and legislation	Civil society	High	Medium
Improved policy risk mitigation	Government agencies	High	High
Increased interoperability	Government agencies	Medium	Low
Improved service delivery	Civil society	High	High
Faster and automatic rule updates	Civil society; Business and industry	High	Low

G7 Strategy for Developing Rules as Code

Establish a Task Force to Research Implementing Machine-Executable Legislation

To advance the digital transformation of legislation, the G7 should leverage its expertise in regulatory cooperation to explore how laws can be structured for both human and machine usability. Under the oversight of the G7 Digital & Technology Working Group (D&T WG), a Regulatory Innovation Task Force (G7 RITF) should be established to investigate, pilot, and develop best practices for machine-executable legislation. This initiative would not only ensure the effective conversion of legal texts into digital formats but also address critical issues of governance, technical standards, and legal consistency in a rapidly evolving digital landscape (Mohun and Roberts 2020).

1. **Establish a G7 Regulatory Innovation Task Force (G7 RITF).** The task force, overseen by the G7 D&T WG, should (1) identify low-risk legislative areas for pilot projects, (2) research and test methods for structuring laws in human- and machine-readable formats, and (3) design safeguarding audits to be shared with G7 members implementing RaC (Billa 2024). G7 RITF should be composed of experts from relevant G7 member government agencies, think tanks, and international institutions like the OECD—alongside private sector and civil society RaC specialists—the task force should regularly report to G7 Digital and Tech Ministers. Its final recommendations can be delivered at the 2026 G7 Digital and Tech Ministers Meeting in France, potentially supported by France's Direction interministérielle du Numérique (DINUM), which has been a leader in RaC initiatives. Findings can be published as the *G7 Regulatory Innovation Action Plan* and influence the G7 Digital and Tech Ministerial Declaration, laying the foundation for further development as France assumes the G7 presidency.
2. **Develop principles and requirements for digital legislation.** The task force should formulate a set of guiding principles to support the technical implementation of RaC, supporting consistency and interoperability across G7 jurisdictions and informing the *G7 Regulatory Innovation Action Plan*. This includes (1) developing a comprehensive requirements framework clarifying and identifying which rules could be encoded, (2) establishing technical standards for drafting new laws that are simultaneously human-readable and machine-executable, and (3) providing recommendations for open-source frameworks.
3. **Evaluate RaC approaches, governance and technical challenges.** The task force should assess methods for coding rules, comparing manual coding, semantic technologies, and domain model-based regulation through case studies and expert interviews (Mohun and Roberts 2020). Key factors include choosing between rule engines or integrating RaC from the start, technology selection, compliance testing, and sharing rules for third-party use. The task force should also address scalability and propose governance structures that manage legal implications, ensuring RaC remains a strategic policy choice.

Establishing a task force to research implementing machine-executable legislation will enable the G7 to spearhead the development of machine-executable legislation, paving the way for clearer, more efficient, and interoperable regulatory frameworks in the digital age.

Table 2. Summary of G7 strategy for adopting Rules as Code

Action to be Taken	Initiatives to Strengthen	Feasibility	Importance
Establish a task force to research implementing machine-executable legislation	G7 Digital & Technology Working Group	Low	High
Promote knowledge-sharing and best practices for encoding laws	G7 Digital & Technology Working Group; German Competence Center for Innovative Procurement (KOINNO); Canada School of Public Service (CSPS)	High	Medium
Support RaC pilot projects run by G7 members	OpenFisca; Étalab; Digital Department (DINUM); GovTech4All; Rules of Origin Self-Assessment (ROSA); Data Free Flow with Trust (DFFT)	Medium	Medium

Promote Knowledge-Sharing and Best Practices for Encoding Laws

To accelerate RaC adoption, the G7 should promote knowledge-sharing and best practices for encoding laws. By developing shared principles and frameworks that countries can adapt to their systems, while prioritizing open-source technologies, RaC's value can be enhanced while ensuring interoperability and avoiding divergent approaches.

1. **Commission a G7 compendium of best practices for encoding laws.** The G7 should commission a *Compendium of Best Practices for Rules as Code*, similar to the OECD's Digital Government Services report (Italian G7 Presidency 2024). This compendium would outline shared principles, frameworks, standards, and safeguards for encoding laws, drawing on initiatives like New Zealand's Better Rules (2025). By disseminating these practices, the G7 can promote a consistent, open-source RaC approach, avoiding fragmented, vendor-driven solutions. Unlike the *G7 Regulatory Innovation Action Plan*, which focuses on piloting RaC, this compendium will summarize existing approaches across jurisdictions.
2. **Host a G7 RaC knowledge-sharing workshop.** The G7 should convene a workshop under the Digital & Technology Working Group to exchange insights on RaC. The workshop would cover: (1) case studies like the UK's Digital Regulatory Reporting (DRR); (2) challenges of integrating technical solutions with existing infrastructure; (3) risks of applying RaC to real-world programs; and (4) limitations of fully transitioning

to RaC. It would foster dialogue on balancing law and code, preserving constitutional principles, and ensuring effective data integration and rule sharing.

3. **Foster international collaboration on RaC initiatives.** The G7 should encourage collaborative networks among organizations exploring RaC, such as the German Competence Center for Innovative Procurement (KOINNO) and the Canada School of Public Service (CSPS), which have been experimenting with converting existing regulations into code. This collaboration would enable the pooling of findings and methodologies, paving the way for joint development of standards that ensure interoperability, scalability, and the effective translation of legislative intent into machine-executable formats. Such partnerships can further link to broader standards bodies, like the International Organization for Standardization or the World Trade Organization (WTO), to align cross-border regulatory efforts (WTO 2022).

Promoting knowledge-sharing and best practices for encoding laws will help the G7 create a robust ecosystem for encoding laws, ensuring that best practices are shared and continuously refined across national and international platforms.

Support RaC Pilot Projects Run by G7 Members

The G7 should support low-risk RaC pilot projects across regulatory domains to identify use cases and scalability. Through hackathons, incubators, training, and targeted projects backed by G7 Digital and Tech ministries, members can showcase successful cases and develop scalable models to improve digital public services and regulatory compliance.

1. **Organize hackathons and API development initiatives for RaC.** The G7 should support events such as hackathons to foster the use of RaC engines like OpenFisca. These initiatives would encourage the development of new APIs that enable users to better understand their rights and obligations through interactive simulators—similar to projects led by Étalab and the Interministerial Digital Department (DINUM) in 2014. Such events would not only drive innovation but also generate valuable insights into how law and technology can effectively interact.

2. **Launch incubators for developing RaC tools for public service.** Support the creation and expansion of incubators, similar to France's DINUM and its 2015 launch of beta.gouv.fr, to help RaC projects develop a clear path to government adoption (beta.gouv.fr, 2022). These incubators would enable startups and public sector innovators to implement digital public services using RaC.

3. **Support training and capacity-building programs on RaC.** To build the necessary skills for RaC adoption, the G7 should back training initiatives like France's GovTech4All program, which offers training on OpenFisca to other EU member states. Such programs help bridge the knowledge gap by providing legal and

technical expertise, ensuring that governments can effectively implement and maintain RaC solutions across jurisdictions.

4. **Pilot RaC adoption in trade and commercial policy frameworks.** The G7 should support programs that trial RaC applications in trade and commercial policies. In parallel, the G7 should encourage international trade agreements to publish official machine-executable packages of commercial policies—aligning with the Data Free Flow with Trust (DFFT) framework and endorsed by G7 Digital and Tech Ministers at the Japan summit (World Trade Organization 2022). These pilots will be critical for understanding integration challenges and refining RaC approaches for cross-border regulatory environments.

Supporting RaC pilot projects run by G7 members will enable G7 members to build robust, scalable, and safe RaC initiatives, fostering innovation and enhancing the effectiveness of digital public services and regulatory compliance across international borders.

Implementation Challenges and Mitigation Strategies

Dependency on Proprietary Systems

Relying on proprietary platforms for drafting RaC limits transparency and flexibility, impeding widespread adoption and innovation.

- *Mitigation:* Prioritize the use of open-source platforms and open standards for drafting and implementing RaC to avoid vendor lock-in, ensuring transparency, interoperability, and long-term adaptability.

Technical Knowledge Bottlenecks Within Rulemaking Organizations

RaC tools are primarily designed by programmers, creating a user-developer gap where legal and policy professionals face knowledge bottlenecks and lack sufficient training. This often results in encoded rules being perceived as untrustworthy unless created directly by rulemakers.

- *Mitigation:* Leverage the unique technical, judicial, and subject matter expertise within federal public services to build open-source, user-friendly tools. Ideally, the same individual—with both legal and programming expertise—should encode rules. When this is not feasible, lawmakers can be trained in encoding laws with dedicated

IT support to bridge technical knowledge gaps (Canada School of Public Service 2024).

Interoperability Issues with Different Methods of Implementing RaC

Encoded rules from different departments and governments often lack interoperability due to inconsistent standards, vocabularies, and logical frameworks, leading to a fragmented ecosystem.

- *Mitigation:* Prevent a fragmented ecosystem by developing common frameworks, guides, and standards for rule creation and data integration. Prioritize open-source initiatives and collaborate with international bodies (e.g., ISO, WTO) to harmonize vocabularies and logical models (McNaughton 2020).

Lack of Maintenance or Scalability for RaC Pilot Projects

RaC systems are not consistently updated alongside legislative changes, and scaling pilot projects into fully operational systems remains difficult, compromising long-term viability.

- *Mitigation:* Integrate with official legislative databases to automatically track changes, build a CI/CD pipeline with automated tests and containerized deployments (e.g., Docker), and use version control to validate and scale RaC code. Have teams meets regularly to audit and update the system. Develop a process to update written legislation and code simultaneously, automatically notifying encoders of legal changes to ensure timely updates. Focus on pilot projects with genuine use cases and a clear path to scalability by prioritizing projects requested by government agencies to solve specific, tangible problems rather than imposing top-down solutions. Engage agencies directly in defining problems to ensure RaC solutions align with their operational needs (Mowbray, Chung, and Graham Greenleaf, 2023).

Liability Risks from Downstream Applications

Unclear governance and oversight in RaC systems create uncertainty over legal accountability for third-party actions based on coding errors, exposing governments to potential liability.

- *Mitigation:* Follow established guidelines like the Treasury Board of Canada Secretariat's Directive on Automated Decision-Making (2024). Use legal disclaimers, disclose risks to users, and clearly define oversight roles (Fraser and Barraclough

2024). Encourage a cultural shift within government to support initiatives that improve public access to government information. Communicate that the standard for RaC systems should not be perfection, but whether they perform better than a human caseworker or equivalent government employee.

Challenges in Capturing Legal Nuance in Code

Translating the full meaning of legal texts into code is inherently challenging, as imperative programming languages may struggle to capture all legal nuances and ambiguities.

- *Mitigation:* Use a hybrid approach that integrates legal expertise with technologies like semantic analysis and natural language processing (Mohun and Roberts 2020). Embed machine- executable logic into rule-drafting from the outset to enhance accuracy and alignment with legal intent (Andrews and de Sousa 2020). Limit RaC to low-risk legal areas and incorporate human oversight for critical decision-making (Billa 2024).

Political and Institutional Resistance to RaC

A lack of political buy-in from rulemakers who are skeptical about the value of encoding laws as code could hinder efforts to mainstream RaC.

- *Mitigation:* Address rule maker hesitancy by focusing RaC pilot projects on less contentious domains where high accuracy and public support is achievable with a simple prototype, such as benefits policy. Resulting tools could be used in web apps that help individuals assess their eligibility for benefits or for policy analysts to identify gaps in benefit programs through simulation (OpenFisca 2024b). Collaborating to identify tools that rulemakers believe will help them in their work can also build support for technical projects. Additionally, encourage a cultural shift within government to support initiatives that enhance transparency.

Table 3. Overview of challenges and mitigation strategies associated with implementing Rules as Code

Challenge	Likelihood	Severity	Mitigation
Dependency on proprietary systems	Low	Low	Prioritize use of open-source software for drafting and implementing RoC
Technical knowledge bottlenecks within rulemaking organizations	Medium	Low	Build user-friendly tools and have the rule encoder and rulemaker be the same individual
Interoperability issues with different methods of implementing RaC	Medium	Low	Develop common frameworks, guides, and standards for rule creation
Lack of maintenance or scalability for RaC pilot projects	Medium	High	Integrate with legislative databases, build deployment pipelines, and establish teams to update systems
Liability risks from downstream applications	Medium	High	Adhere to established guidelines, include legal disclaimers, and transparently communicate risks
Challenges in capturing legal nuance in code	High	High	Embed machine-executable logic into the rule-drafting process from the start
Political and institutional resistance to RaC	High	High	Focusing pilot projects on areas where high accuracy and support is achievable with a simple prototype

Next Steps for the G7

To realize the benefits of Rules as Code, the G7 must take a strategic, coordinated approach. A Regulatory Innovation Task Force under the G7 Digital & Technology Working Group will drive research, pilots, and standards for machine-executable legislation. A best-practices compendium, a G7 RaC knowledge-sharing workshop, and pilot projects in trade and

benefits assessments will showcase RaC's value and promote interoperability. Prioritizing open-source solutions and multidisciplinary collaboration will enhance scalability and prevent fragmentation. Addressing political resistance, legal liability, and technical capacity gaps will be key to making RaC a sustainable governance tool. These steps will position the G7 as a leader in digital regulatory transformation, paving the way for more transparent, efficient, and accessible rulemaking.

Author Biographies

Jess Rapson, Senior Researcher, G7 Research Group, University of Toronto [Canada]
Jess is a machine learning engineer with a background in both statistical science and public policy, focusing on applications of AI/ML in optimising decision-making processes for organisations that serve the public. She has a Master of Public Policy degree from the University of Toronto and a Master of Science in Statistical Science degree from the University of Oxford

Patrick A. McLaughlin, Director of Policy Analytics, Mercatus Center, George Mason University [United States]
Patrick is the director of policy analytics and a senior research fellow at the Mercatus Center at George Mason University. His research focuses primarily on regulations and the regulatory process. He has authored dozens of peer-reviewed studies in diverse areas, including regulatory economics, administrative law, industrial organization, and international trade.

Meng Weng Wong, Principal Research Fellow, Singapore Management University [Singapore]
Meng is a computer scientist, entrepreneur, and technologist, specialising in deep-tech Internet infrastructure and open-source startups. He is the Principal Investigator for the SMU Research Programme in Computational Law and co-founder of Legalese, an open source company pioneering computational law.

Jason Morris, Former Director of Rules as Code, Government of Canada [Canada]
Jason is a lawyer, rules as code expert, and software developer with over 5 years of experience in applying computational law and artificial intelligence to legal service delivery. Jason formerly worked for the Government of Canada as the Director of Rules as Code in Employment and Social Development Canada and the Public Health Agency of Canada.

Richard Pope, Director, Richard Pope & Partners [United Kingdom]
Richard was part of the founding team of the UK Government Digital Service and the first product manager for GOV.UK. He created many of the initial design concepts for both GOV.UK and the digital account for Universal Credit (the UK's social security service). He was

a senior fellow at Harvard in 2018/2019, researching and lecturing on 'Government as a Platform'.

Matti Schneider, Director of Cooperation, OpenFisca [France]
Matti has been involved with "legislation as code" since 2014, from the initial open-sourcing of the OpenFisca law modelling tool to developing it into a production-ready engine. He formerly served as the Chief Innovation Officer at the French Ministry for European and Foreign Affairs

Tejas Sinha, Founder and Director, Rutgers Economic Lab [United States]
Tejas is an undergraduate student at Rutgers University interested in AI policy, financial intermediation, and constitutional law. He is the founder and director of Rutgers Economics Labs, which produces research papers for government agencies, think tanks, and other public policy organizations.

Vitor Tomaz, Blavatnik School of Government, University of Oxford [United Kingdom]
Vitor is a Master of Public Policy student at the Blavatnik School of Government in the University of Oxford. Having worked with more than 20 different organisations, Vitor developed an interest in what makes some of them so effective, while others struggle to deliver their mandates, especially in the third sector and government.

References

Andrews, Pia and Tim de Sousa. 2020. We need to recode the rules of government. *Apolitical*. https://apolitical.co/solution-articles/en/we-can-create-better-results-when-we-code-the-rules.

Australian Society for Computers & Law. 2021. "Masterclass 4 - OpenFisca." June 3. YouTube video. https://www.youtube.com/watch?v=qnn8p8xaP1U.

beta.gouv.fr. 2022. Construisons ensemble les services publics numériques de demain. https://beta.gouv.fr/.

Billa, Bhumika. 2024. Law as Code: Exploring Information, Communication, and Power in Legal Systems. *Journal of Cross-Disciplinary Research in Computational Law*. https://journalcrcl.org/crcl/article/view/39.

Bullinga, Marcel, 2004. Intelligent Government: Invisible, Automatic, Everywhere. *The Futurist 32*, 32–34.

Canada School of Public Service. 2024. Rules as Code in Canada: Summary of Experiments and Lessons Learned. Presentation, February. https://oecd-opsi.org/wp-content/uploads/2024/04/Rules-as-Code-in-Canada.pdf.

de Sousa. 2021. How Rules as Code can transform government. *Apolitical*. September 6. https://apolitical.co/solution-articles/en/how-rules-as-code-can-transform-government.

Fraser, Hamish and Tom Barraclough. 2024. Governing Digital Legal Systems: Insights on Artificial Intelligence and Rules as Code. MIT Computational Law Report. October 14. https://law.mit.edu/pub/governingdigitallegalsystems/release/2.

G7 Industry, Technology and Digital Ministerial Meeting. 2024. Ministerial Declaration. Verona and Trento, March 14–15. https://www.g7italy.it/wp-content/uploads/G7-Industry-Tech-and-Digital-Ministerial-Declaration-Annexes-1.pdf.

Italian G7 Presidency. 2024. G7 Compendium of Digital Government Services. Report. October 15. https://www.g7italy.it/wp-content/uploads/1728922826-g7-compendium-of-digital-government-services.pdf.

Kühn, Hannes. 2021. *Content First, Legal Text Second. Designing Effective and Practicable Legislation*. https://interoperable-europe.ec.europa.eu/collection/better-legislation-smoother-implementation/document/content-first-legal-text-second-designing-effective-and-practicable-legislation.

Lindqvist, Angelica. 2024. The thing with Rules. European Commision GovTech Connect. May 12. https://interoperable-europe.ec.europa.eu/collection/govtechconnect/news/rules-code-rac.

Martin, Phillipa. 2023. "Using Drupal for Rules as Code projects in NZ and Australia / Showcases & PM / Phillipa Martin." July 13. YouTube video. https://www.youtube.com/watch?v=iBcOrrBCEgA.

McNaughton, Scott. 2020. Week 46 — Rules as Code And Other Musings. *Medium*. January 25. https://scottamcnaughton.medium.com/week-46-rules-as-code-and-other-musings-123360522a93.

Mohun, James and Alex Roberts. 2020. Cracking the code: Rulemaking for humans and machines. OECD Working Papers on Public Governance No. 42. https://oecd-opsi.org/wp-content/uploads/2022/03/rac-wp.pdf.

Mowbray, Andrew, Philip Chung and Graham Greenleaf. 2023. Representing legislative Rules as Code: Reducing the problems of 'scaling up'. *Computer Law & Security Review, 48*. https://www.sciencedirect.com/science/article/abs/pii/S0267364922001157.

New Zealand Ministry of Business, Innovation and Employment. 2025. What Better rules – better outcomes is all about. https://www.betterrules.govt.nz/about.

OECD. 2016. Open government: The global context and the way forward. https://www.oecd.org/content/dam/oecd/en/publications/reports/2016/12/open-government_g1g74242/9789264268104-en.pdf.

OECD. 2023. Data free flow with trust. https://www.oecd.org/en/about/programmes/data-free-flow-with-trust.html.

OpenFisca. 2024a. OpenFisca Documentation. https://openfisca.org/doc/.

OpenFisca. 2024a. Showcase. https://openfisca.org/en/showcase/.

Shultz, Sébastien. 2019. Can Free Software Tackle the Lack Of Transparency in the Tax And Welfare System? *Sociology of political hackers on the margins of the state.* https://shs.cairn.info/article/E_RFSP_695_0845?lang=en.

Treasury Board of Canada Secretariat. 2024. Guide on the Scope of the Directive on Automated Decision-Making. July 18. https://www.canada.ca/en/government/system/digital-government/digital-government-innovations/responsible-use-ai/guide-scope-directive-automated-decision-making.html.

World Trade Organization. 2022. The promise of TradeTech: Policy approaches to harness trade digitalization. Report. https://www.wto.org/english/res_e/booksp_e/tradtechpolicyharddigit0422_e.pdf.

Appendix A. Actions Taken by G7 Members to Implement Rules as Code

Member	Action	Responsible Party	Date
🇫🇷	Created **OpenFisca** as a tool to assess economic policy impact and released it under an open source license (OpenFisca, 2024a)	France Stratégie; Institut d'économie publique	2011
🇫🇷	Organized a hackathon to foster OpenFisca usage and added APIs to enable users to better understand their rights and obligations through simulators for social benefits and costs of new hire (OpenFisca, 2024a)	Étalab; Interministerial Digital Department (DINUM)	2014
🇫🇷	Launched **beta.gouv.fr**., a state digital services Incubator that aims to design digital public services by creating new startups (beta.gouv.fr, 2022)	Interministerial Digital Department (DINUM)	2015
🇬🇧	Launched **Digital Regulatory Reporting (DRR)** as a joint initiative to make regulatory reporting more efficient and effective including exploring how to use technology to link regulation, compliance procedures, and firms' policies and standards together with firms' transactional applications and databases (Mohun and Roberts 2020)	Financial Conduct Authority (FCA); Bank of England (BoE)	2018
🇩🇪	Published Content First, Legal Text Second. Designing Effective and Practicable Legislation on designing legislation for a modern Germany (Kühn, 2021)	National Regulatory Control Council (NKR)	2019
🇩🇪	Published an impulse paper detailing how to realize machine-consumable law in a German context (Mohun and Roberts 2020)	Competence Center for Innovative Procurement (KOINNO)	2019
🇨🇦	Began experimenting with RaC tools and approaches, focused on converting existing regulations into code using the tool **OpenFisca** (CSPS, 2024)	Canada School of Public Service (CSPS)	2019
🇫🇷	Created **LexImpact**, a simulator based on **OpenFisca**, enabling citizens to assess the impact of reforms on individuals—and for lawmakers, on the whole population—within a few seconds (OpenFisca, 2024a)	Assemblée nationale (French Parliament)	2019
🇯🇵	Proposed the **Data Free Flow with Trust (DFFT)** framework to balance privacy and security protections for personal and sensitive data with the promotion of cross-border data flows, proposal was endorsed by G7 Digital and Tech Ministers the Japan summit (OECD, 2023)	G7 Digital and Tech Ministers	2023
🇨🇦	Developed **Blawx**, an open-source and user-friendly programming tool designed to help non-programmers encode, test, and use rules (CSPS, 2024)	National Regulatory Control Council (NKR)	2023
🇪🇺	Launched the **Rules of Origin Self-Assessment (ROSA)** tool to allow small businesses to check whether products qualify for preferential tariff treatment under EU trade agreements, simplifying trade (Mohun and Roberts 2020)	European Commission (EC)	2023
🇨🇦	Developed the **Directive on Automated Decision-Making** for departments using automated decision systems to fully or partially automate an administrative decisions (Treasury Board of Canada Secretariat, 2024)	Treasury Board of Canada Secretariat	2024
🇪🇺	Promoted RaC adoption at EU level through the **GovTech4All program**, offering training on **OpenFisca** to EU member states (OpenFisca, 2024a)	European Commission (EC)	2024
🇮🇹	Launched OECD summary of digital government services as the **G7 Compendium of Digital Government Services** at the **G7 Digital and Technology Ministerial Meeting** in Italy (Italian G7 Presidency, 2024)	Italian G7 Presidency	2024
🇫🇷	Hosted **Rules as Code Europe** conference, bringing together global leaders in Rules as Code (Lindqvist, 2024)	Direction interministérielle du Numérique (DINUM); GovTech4All	2025

Appendix B. G7 Strategy for Developing Rules as Code Prioritization Framework

Timeline	Action Item	Responsible Party	Key Tasks	Dependencies	Priority
Phase 1: Laying RaC Foundations (<1 year)	1.1 Establish a G7 Regulatory Innovation Task Force	G7 Digital & Technology Working Group (D&T WG)	Produce a *G7 Regulatory Innovation Action Plan*; deliver recommendations at delivered at the 2026 G7 Digital and Tech Ministers Meeting in France	Successful decision to form task force during Canada's G7 presidency	High
	2.2 Host a G7 RaC knowledge-sharing workshop	D&T WG	Contact RaC experts; record workshop findings; inform G7 RITF about workshop outcomes	Successful decision to host workshop during Canada's G7 presidency; participation of RaC practitioners	Medium
	1.2 Develop principles and requirements for digital legislation	Regulatory Innovation Task Force (G7 RITF)	Formulate set of guiding principles to support RaC technical implementation	Successful decision to form task force during Canada's G7 presidency	High
	1.3 Evaluate RaC approaches, governance, and technical challenges	G7 RITF	Compare RaC approaches; brainstorm solutions to challenges	Availability of RaC case studies and experts	Medium
	2.1 Commision a G7 compendium of best practices for encoding laws	D&T WG; Organization for Economic Co-operation and Development (OECD)	Produce a *G7 Compendium of Best Practices for Rules as Code* summarizing existing approaches to RaC across jurisdictions	Availability of OECD to cooperate in producing compendium of best practices	High
Phase 2: RaC Capacity Building (1-2 years)	2.3 Foster international collaboration on RaC initiatives	D&T WG; G7 Digital and Tech Ministers	Host meetings between G7 national organisations that are interested in implementing RaC	National interest in advancing RaC among G7 members	Low
	3.1 Organize hackathons and API development initiatives for RaC	G7 Digital and Tech Ministers	Fund and organize RaC hackathons	Ministerial budget allocated to exploring RaC	Medium
	3.2 Launch incubators for developing RaC tools for public service	G7 Digital and Tech Ministers	Fund and launch RaC incubators	Ministerial budget allocated to exploring RaC	Medium
	3.3 Support training and capacity-building programs on RaC	G7 Digital and Tech Ministers	Fund and support RaC training programs	Ministerial budget allocated to exploring RaC	Medium
Phase 3: Scaling RaC (2-4 years)	3.4 Pilot RaC adoption in trade and commercial policy frameworks	D&T WG; World Trade Organization (WTO); G7 Trade Ministers	Encourage international trade agreements to publish official machine-executable packages of commercial policies	Political motivation to implement RaC in international trade policies	Low